PROFESSIONAL DIPLOMA IN CLOUD COMPUTING PRODUCT PLAN

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DOCUMENT HISTORY

Version Number	Date of release	Details	Author
1	6 August 2023	Initial Creation	Srikanth
1.1	12 August 2023	Changes in the Modules & session plan	Srikanth
1.2	25 August 2023	Changes in the Industry Certification	Srikanth

1. Course Overview

Headings	Details
Course Code	PFCC
Product Title (Internal)	Professional Diploma in Cloud Computing
Course Title (External)	Professional Diploma in Cloud Computing
Learning Mode	Full-time and Part-time
Delivery Mode	Synchronous & Asynchronous E-learning
Delivery Country	International through EduCLaaS
Target Persona	 Minimum second-class bachelor's degree from a recognized university Recognized professional qualification with relevant work experience. Polytechnic Diploma holders in IT /Computer science with a minimum of 5 years of relevant working experience Matured candidates with relevant work experience for a minimum of 8 years
	 English Proficiency: IELTS - 6.5 (with no elements lower than 5.5) or its equivalent.
Entry-Prerequisites	 Academic Qualification: Minimum second-class bachelor's degree in any field from the recognized University Non-graduates with appropriate professional qualifications will be considered on a case-to-case basis. Polytechnic Diploma in IT / Computer Science with a minimum of 5 years relevant experience will be considered on a case-to-case basis. Matured candidates with a minimum of 8 years of relevant experience will be considered on a case-to-case basis. Matured candidates with a minimum of 8 years of relevant experience will be considered on a case-to-case basis. Matured candidates with a minimum of 8 years of relevant experience will be considered on a case-to-case basis. Minimum 21 years. Experience: Not Mandatory other than matured candidates & Polytechnic diploma holders
SSG Course Reference No	NA
Course Validity Date	NA
Course Developer	EDUCLAAS, INDIA
Relevant Job roles after completion of the course	Cloud Administrator

2. Course Brief

The "Professional Diploma in Cloud Computing" will open the doors to promising job prospects and various opportunities in the rapidly expanding field of cloud technology. Upon completing this comprehensive course, students will be equipped with the essential skills to take on diverse job roles in cloud administration, server management, Python programming, DevOps engineering, and agile project management. This diploma program sets the foundation for a successful career in the cloud computing industry, where demand for skilled professionals continues to surge.

The course covers a series of modules designed to provide in-depth knowledge and practical expertise. In the "Install and Configure Server" module, learners will gain expertise in cloud fundamentals, identity and resource administration, virtual networking, storage management, and data protection. Next, the "Administer Server" module delves into implementing identity services, virtualization, and hybrid scenarios in Windows Server management, further expanding their skills in networking and storage solutions.

The "Configure Advanced Server" module takes learners to an advanced level, covering integrated security solutions, high availability, disaster recovery, migration strategies, and operational monitoring in hybrid scenarios. Additionally, the "Cloud Administration" module focuses on planning, implementing, and managing an Azure Virtual Desktop infrastructure, along with access, security, and user environment management.

Incorporating Python programming into the curriculum, the course introduces learners to programming basics, object-oriented programming, testing, and documentation, equipping them with essential coding skills for cloud computing applications. The "DevOps Engineering" module introduces learners to the DevOps transformation journey, continuous integration, release strategy design, and secure continuous deployment using Azure Pipelines and GitHub Actions.

Moreover, the "Agile Project Management" module provides learners with agile project management and Scrum implementation techniques, building effective Scrum teams, and managing projects efficiently. Case studies offer practical insights into real-world scenarios, and the "Capstone Project-Cloud Computing (Industry Project)" allows learners to apply their knowledge to agile planning, version control with Git, configuring agent pools, and implementing continuous integration with Azure Pipelines.

Completing this Professional Diploma in Cloud Computing will provide learners with a competitive edge in the job market. Employers value professionals with a comprehensive understanding of cloud technology, Python programming, DevOps practices, and agile project management, making graduates of this program highly sought-after. By mastering the critical concepts of cloud computing, learners will be better positioned to drive innovation and efficiency within organizations, leading to accelerated career growth and opportunities for advancement.

In conclusion, the Professional Diploma in Cloud Computing offers a holistic and hands-on learning experience, preparing learners for a wide range of job roles and opportunities in the cloud computing industry. From cloud administration and server management to Python programming and agile project management, this diploma equips learners with the skills and knowledge needed to succeed in today's technology-driven world. Graduates will stand out to potential employers as capable and versatile professionals, poised to contribute significantly to their organizations' success and growth.

Course - KSA Summary

Knowledge Statements:

- Describe cloud computing fundamentals, including resource administration and virtual networking.
- Explain Python programming basics, object-oriented programming, and testing techniques.
- Identify DevOps transformation principles and continuous integration strategies using Azure Pipelines and GitHub Actions.
- Recognize agile project management concepts, Scrum implementation, and effective teambuilding practices.
- Outline the implementation process of Azure Virtual Desktop infrastructure and user environment management.

Skills Statements:

- Configure and manage cloud resources, virtual machines, and Azure Virtual Desktop sessions.
- Develop Python programs, apply object-oriented concepts, and create comprehensive documentation.
- Implement continuous integration using Azure Pipelines and GitHub Actions for DevOps projects.
- Apply agile project management principles, conduct Scrum planning, and manage project teams effectively.
- Analyze and troubleshoot server-related issues, implement hybrid networking solutions, and optimize cloud performance.

Ability Statement:

Ability to proficiently administer cloud-based infrastructures, effectively develop and deploy Python applications, lead agile projects, and implement DevOps practices with confidence, fostering innovation and organizational growth

Course Summary

4.1 Module-Session Details

Sl				Learning Activity						
Ν	Module Names Modul		E-	E- Flipped Mentoring Support		ort	Addition	Assess	Total	
0		e Code	Learni ng (Async)	Class (Sync)	Assignm ent Sync	Project Planning Sync	Project Imple Async	al Practice Async	ment (Sync)	Hours
1	Install & Configure	PFCC-	20	10	10	10	10	60	0.5	120 5
	Server	AC1	20	10	10	10	10	00	0.5	120.5
2	Administer Server	PFCC- AC2	20	10	10	10	10	60	0.5	120.5
3	Configure Advanced Server	PFCC- AC3	20	10	10	10	10	60	0.5	120.5
4	Cloud Administration	PFCC- ACA	20	10	10	10	10	60	0.5	120.5
5	Python Programming	PFCC- PYT	20	10	10	10	10	60	0.5	120.5
6	Dev Ops Engineering	PFCC- DVO	20	10	10	10	10	60	0.5	120.5
7	Agile Project Management	PFCC- PMI	20	10	10	10	10	60	0.5	120.5
8	Capstone Project- Cloud Computing	PFCC CCL	0	0	0	30	30	60	0.5	120.5
	TOTAL		140	70	70	100	100	480	4	964

4.2 Learning Mode & Duration

Learning Mode	Course Duration	Guided Learning Hours	Additional Practice Hours	Hours/Week	days/Week	Hours/Day
Full-time (Bootcamp)	6 months (24 weeks)	480 hours	480 hours	40 hours/week	5 days/week	8 hours/day
Part-time	12 months (48 weeks)	480 hours	NA	10 hours/week	3 day/week	3.5 hours/day

4.3 Duration module wise

4.3.1 Full Time - 6 months

Sl No	Modules	M	Aodules	Duration in weeks per module	Total Duration in Weeks
1	Semester 1 – Prof Ce cloud computing	rt in M	Iodule 1 - 4	3 weeks each	12 Weeks
2	Semester 2 – Prof Di cloud computing (to	pin M pup)	Aodule 5-8	3 weeks each	12 weeks
			Total		24 Weeks

4.3.2 Part Time - 12 months

SI	Modules	Modules	Duration in weeks	Total Duration in
NO			per mouule	Weeks
1	Semester 1 – Prof Cert in cloud computing	Module 1 - 4	5 weeks each	20 Weeks
2	Semester 2 – Prof Dip in	Module 5-7	4-6 weeks each	16 weeks
	cloud computing (top up)	Module 8	12 weeks	12 weeks
		48 Weeks		

5. Module 1 – Install & Configure Server

5.1 Module Brief

The "Install and Configure Server" learners module focuses on equipping learners with the essential knowledge and skills required for server installation and configuration. Throughout the module, learners will engage with a comprehensive range of instructional units (IUs) covering various aspects of server administration.

The IUs include Cloud Fundamentals, Administer Identity and Resources, Administer Virtual Networking and Traffic Management, Administer Azure Storage and Virtual Machines, Administer PaaS Compute Option, and Administer Data Protection & Monitoring. By completing these units, learners will gain a deep understanding of cloud computing principles, resource management, network optimization, storage administration, and data protection.

The module's projects are designed to consolidate and apply the acquired knowledge and skills. Learners will take on the responsibility of leading large-scale installation projects, encompassing the deployment, decommissioning, and coordination of multiple hardware and software components. Through these projects, learners will refine their ability to develop comprehensive deployment plans and execute them efficiently.

Upon successful completion of the Install and Configure Server module, learners will possess the expertise to prioritize and execute server installation projects effectively. They will demonstrate proficiency in designing and implementing deployment strategies, managing hardware and software components, and ensuring the smooth coordination of installation activities. The module will enable learners to contribute to the successful implementation of server infrastructure, supporting organizations in meeting their computing needs.

Instructional Units:

- 1. Cloud Fundamentals
- 2. Administer Identity and Resources
- 3. Administer Virtual Networking and Traffic Management
- 4. Administer Azure Storage and Virtual Machines
- 5. Administer PaaS Compute Option, Data Protection & Monitoring

Module Project:

Project Objective: Lead large-scale installation projects, involving deployment, decommissioning, and coordination of multiple hardware and software deployment plan.

Project Tasks:

- 1. Manage Azure Active Directory identities for user authentication and access control.
- 2. Deploy and manage Azure virtual machines using PowerShell and Cloud Shell.
- 3. Deploy applications using Azure Kubernetes Service for container orchestration

5.2.1 – Full Time

Session	Consister Trees	Day No.	Duration
No#	Session Type	#	Hrs
1	E-Learning 1	1	2
2	Flipped Class on IU 1	1	2
3	Mentoring Support - Assignment on IU 1	1	2
4	Mentoring Support -Additional Practice 1	1	2
5	E-Learning 2	2	2
6	Flipped Class on IU 2	2	2
7	Mentoring Support - Assignment on IU 2	2	2
8	Mentoring Support -Additional Practice 2	2	2
9	E-Learning 3	3	2
10	Flipped Class on IU 3	3	2
11	Mentoring Support - Assignment on IU 3	3	2
12	Mentoring Support -Additional Practice 3	3	2
13	E-Learning on 4	4	2
14	Flipped Class on IU 4	4	2
15	Mentoring Support - Assignment on IU 4	4	2
16	Mentoring Support -Additional Practice 4	4	2
17	E-Learning 5	5	2
18	Flipped Class on IU 5	5	2
19	Mentoring Support - Assignment on IU 5	5	2
20	Mentoring Support -Additional Practice 5	5	2
21	E-Learning 6	6	2
22	Mentoring Support – Project Planning -1	6	2
23	Mentoring Support – Additional Practice 6	6	4
24	E-Learning 7	7	2
25	Mentoring Support -Project Implementation -1	7	2
26	Mentoring Support – Additional Practice 7	7	4
27	E-Learning 8	8	2
28	Mentoring Support – Project Planning -2	8	2
29	Mentoring Support – Additional Practice 8	8	4
30	E-Learning 9	9	2
31	Mentoring Support – Project Implementation -2	9	2
32	Mentoring Support – Additional Practice 9	9	4
33	E-Learning 10	10	2
34	Mentoring Support – Project Planning -3	10	2
35	Mentoring Support – Project Implementation -3	10	2
36	Mentoring Support – Additional Practice 10	10	2
37	Mentoring Support – Project Planning -4	11	2
38	Mentoring Support – Project Implementation -4	11	2
39	Mentoring Support – Additional Practice 11	11	4
40	Mentoring Support – Project Planning -5	12	2
41	Mentoring Support – Project Implementation -5	12	2
42	Mentoring Support – Additional Practice 12	12	4
43	Mentoring Support – Additional Practice 13	13	8
44	Mentoring Support – Additional Practice 14	14	8
45	Mentoring Support – Additional Practice 15	15	8
46	Summative Assessment (per learner)	16	30 min

5.2.2 - Part Time

Session No#	Session Type	Day No. #	Duration Hrs
1	E-Learning 1	1	2
2	Flipped Class on IU 1	1	2
3	Mentoring Support - Assignment on IU 1	2	2
4	E-Learning 2	3	2
5	Flipped Class on IU 2	3	2
6	Mentoring Support - Assignment on IU 2	4	2
7	E-Learning 3	5	2
8	Flipped Class on IU 3	5	2
9	Mentoring Support - Assignment on IU 3	6	2
10	E-Learning on 4	7	2
11	Flipped Class on IU 4	7	2
12	Mentoring Support - Assignment on IU 4	8	2
13	E-Learning 5	9	2
14	Flipped Class on IU 5	9	2
15	Mentoring Support - Assignment on IU 5	10	2
16	E-Learning 6	11	2
17	Mentoring Support – Project Planning -1	12	2
18	E-Learning 7	13	2
19	Mentoring Support -Project Implementation -1	14	2
20	E-Learning 8	15	2
21	Mentoring Support – Project Planning -2	16	2
22	E-Learning 9	17	2
23	Mentoring Support – Project Implementation -2	18	2
24	E-Learning 10	19	2
25	Mentoring Support – Project Planning -3	20	2
26	Mentoring Support – Project Implementation -3	21	2
27	Mentoring Support – Project Planning - 4	22	2
28	Mentoring Support – Project Implementation -4	23	2
29	Mentoring Support – Project Planning - 5	24	2
30	Mentoring Support – Project Implementation - 5	25	2
31	Summative Assessment (per learner)	26	30 min

6. Module 2 – Administer Server

6.1 Module Brief

The **"Administer Server"** module equips learners with essential knowledge and skills in administering servers using Windows Server technologies. The module comprises various learning units (IUs) that cover a range of topics, Identity Services and Azure AD Integration for Seamless Directory Services, Windows Server Management with Windows Admin Center in Hybrid Environments, Virtualization and Azure VM Deployment in Windows Server, Network, Infrastructure and Hybrid Networking in Windows Server, Storage Solutions and Hybrid File Server Infrastructure in Windows Server

Upon completion of the module, learners will gain the following learning outcomes and abilities, as demonstrated through the listed projects: The ability to lead large-scale installation projects involving the deployment, decommissioning, and coordination of multiple hardware and software deployment plans.

With a focus on Windows Server technologies, learners will develop proficiency in identity services and Azure AD integration, enabling them to ensure seamless directory services. They will also gain expertise in managing Windows Server using the Windows Admin Center, particularly in hybrid environments. Additionally, learners will acquire skills in virtualization and deploying Azure virtual machines within Windows Server. They will become adept in setting up network infrastructure and hybrid networking, as well as implementing storage solutions and hybrid file server infrastructure.

By combining theoretical knowledge with practical project experience, this module prepares learners to excel in administering servers and overseeing complex installation projects in diverse IT environments.

Instructional Units:

- 1. Identity Services and Azure AD Integration for Seamless Directory Services
- 2. Windows Server Management with Windows Admin Center in Hybrid Environments
- 3. Virtualization and Azure VM Deployment in Windows Server
- 4. Network Infrastructure and Hybrid Networking in Windows Server
- 5. Storage Solutions and Hybrid File Server Infrastructure in Windows Server

Module Project:

Project Objective: Determine interoperability of system components and develop a system integration plan.

Project Tasks

- 1. Evaluate the compatibility of identity services and Azure AD integration for seamless directory services.
- 2. Configuration and implementation of integration with secure access.
- 3. Preparing Azure AD for AD DS integration

6.2.1 – Full Time

Session	Consist Trans	Day No.	Duration
No#	Session Type	#	Hrs
1	E-Learning 1	1	2
2	Flipped Class on IU 1	1	2
3	Mentoring Support - Assignment on IU 1	1	2
4	Mentoring Support -Additional Practice 1	1	2
5	E-Learning 2	2	2
6	Flipped Class on IU 2	2	2
7	Mentoring Support - Assignment on IU 2	2	2
8	Mentoring Support -Additional Practice 2	2	2
9	E-Learning 3	3	2
10	Flipped Class on IU 3	3	2
11	Mentoring Support - Assignment on IU 3	3	2
12	Mentoring Support -Additional Practice 3	3	2
13	E-Learning on 4	4	2
14	Flipped Class on IU 4	4	2
15	Mentoring Support - Assignment on IU 4	4	2
16	Mentoring Support -Additional Practice 4	4	2
17	E-Learning 5	5	2
18	Flipped Class on IU 5	5	2
19	Mentoring Support - Assignment on IU 5	5	2
20	Mentoring Support -Additional Practice 5	5	2
21	E-Learning 6	6	2
22	Mentoring Support – Project Planning -1	6	2
23	Mentoring Support – Additional Practice 6	6	4
24	E-Learning 7	7	2
25	Mentoring Support -Project Implementation -1	7	2
26	Mentoring Support – Additional Practice 7	7	4
27	E-Learning 8	8	2
28	Mentoring Support – Project Planning -2	8	2
29	Mentoring Support – Additional Practice 8	8	4
30	E-Learning 9	9	2
31	Mentoring Support – Project Implementation -2	9	2
32	Mentoring Support – Additional Practice 9	9	4
33	E-Learning 10	10	2
34	Mentoring Support – Project Planning -3	10	2
35	Mentoring Support – Project Implementation -3	10	2
36	Mentoring Support – Additional Practice 10	10	2
37	Mentoring Support – Project Planning -4	11	2
38	Mentoring Support – Project Implementation -4	11	2
39	Mentoring Support – Additional Practice 11	11	4
40	Mentoring Support – Project Planning -5	12	2
41	Mentoring Support – Project Implementation -5	12	2
42	Mentoring Support – Additional Practice 12	12	4
43	Mentoring Support – Additional Practice 13	13	8
44	Mentoring Support – Additional Practice 14	14	8
45	Mentoring Support – Additional Practice 15	15	8
46	Summative Assessment (per learner)	16	30 min

6.2.2 - Part Time

Session No#	Session Type	Day No. #	Duration Hrs
1	E-Learning 1	1	2
2	Flipped Class on IU 1	1	2
3	Mentoring Support - Assignment on IU 1	2	2
4	E-Learning 2	3	2
5	Flipped Class on IU 2	3	2
6	Mentoring Support - Assignment on IU 2	4	2
7	E-Learning 3	5	2
8	Flipped Class on IU 3	5	2
9	Mentoring Support - Assignment on IU 3	6	2
10	E-Learning on 4	7	2
11	Flipped Class on IU 4	7	2
12	Mentoring Support - Assignment on IU 4	8	2
13	E-Learning 5	9	2
14	Flipped Class on IU 5	9	2
15	Mentoring Support - Assignment on IU 5	10	2
16	E-Learning 6	11	2
17	Mentoring Support – Project Planning -1	12	2
18	E-Learning 7	13	2
19	Mentoring Support -Project Implementation -1	14	2
20	E-Learning 8	15	2
21	Mentoring Support – Project Planning -2	16	2
22	E-Learning 9	17	2
23	Mentoring Support – Project Implementation -2	18	2
24	E-Learning 10	19	2
25	Mentoring Support – Project Planning -3	20	2
26	Mentoring Support – Project Implementation -3	21	2
27	Mentoring Support – Project Planning - 4	22	2
28	Mentoring Support – Project Implementation -4	23	2
29	Mentoring Support – Project Planning - 5	24	2
30	Mentoring Support – Project Implementation - 5	25	2
31	Summative Assessment (per learner)	26	30 min

7. Module 3: Configure Advanced Server

7.1 Module Brief

The **"Configure Advanced Server"** focuses on configuring and optimizing Windows Server in hybrid environments. It covers various learning units, including integrated security solutions, high availability and disaster recovery, hybrid recovery services and upgrade/migration, migration in hybrid scenarios, and server and operational monitoring.

By completing this module, learners will gain advanced skills in evaluating network requirements, designing, and implementing integrated security solutions, and configuring high availability mechanisms for Windows Server in hybrid environments. They will also learn how to implement hybrid recovery services, perform seamless upgrade/migration, and ensure data integrity during the process. Learners will develop proficiency in planning and executing migrations in hybrid scenarios, considering

factors such as minimal downtime and efficient data transfer. They will also acquire skills in implementing server and operational monitoring tools to optimize performance in hybrid Windows Server environments.

The module's projects provide practical experience to reinforce the acquired knowledge. Through these projects, learners will evaluate network requirements, develop configuration blueprints, assess capabilities, and establish optimization rules for software-defined infrastructure in dynamic environments.

Overall, the "Configure Advanced Server " module equips learners with the necessary skills to configure and optimize advanced server solutions in hybrid Windows Server environments. It enables them to meet organizational needs, enhance system efficiency, and ensure seamless operations in hybrid IT landscapes.

Instructional Units:

- 1. Integrated Security Solutions for Windows Server in Hybrid Environments
- 2. Windows Server High Availability and Disaster Recovery
- 3. Hybrid recovery services and upgrade/migration implementation in Windows Server environments
- 4. Migration in Hybrid Scenarios
- 5. Server and Operational Monitoring in Hybrid Windows Server Scenarios

Module Project:

Project Objective: Evaluate organizational network requirements, develop a configuration blueprint, assess capabilities, and set rules to optimize software-defined infrastructure in changing environments.

Project Tasks

- 1. Evaluate the on-premises server for security vulnerabilities and recommend improvements in the hybrid environment.
- 2. Secure Azure VM with Windows Server 2019 using Azure Security Groups.
- 3. Identify and analyze the source of a performance problem in Windows Server 2019

7.2.1 – Full Time

Session	Consist Trans	Day No.	Duration
No#	Session Type	#	Hrs
1	E-Learning 1	1	2
2	Flipped Class on IU 1	1	2
3	Mentoring Support - Assignment on IU 1	1	2
4	Mentoring Support -Additional Practice 1	1	2
5	E-Learning 2	2	2
6	Flipped Class on IU 2	2	2
7	Mentoring Support - Assignment on IU 2	2	2
8	Mentoring Support -Additional Practice 2	2	2
9	E-Learning 3	3	2
10	Flipped Class on IU 3	3	2
11	Mentoring Support - Assignment on IU 3	3	2
12	Mentoring Support -Additional Practice 3	3	2
13	E-Learning on 4	4	2
14	Flipped Class on IU 4	4	2
15	Mentoring Support - Assignment on IU 4	4	2
16	Mentoring Support -Additional Practice 4	4	2
17	E-Learning 5	5	2
18	Flipped Class on IU 5	5	2
19	Mentoring Support - Assignment on IU 5	5	2
20	Mentoring Support -Additional Practice 5	5	2
21	E-Learning 6	6	2
22	Mentoring Support – Project Planning -1	6	2
23	Mentoring Support – Additional Practice 6	6	4
24	E-Learning 7	7	2
25	Mentoring Support -Project Implementation -1	7	2
26	Mentoring Support – Additional Practice 7	7	4
27	E-Learning 8	8	2
28	Mentoring Support – Project Planning -2	8	2
29	Mentoring Support – Additional Practice 8	8	4
30	E-Learning 9	9	2
31	Mentoring Support – Project Implementation -2	9	2
32	Mentoring Support – Additional Practice 9	9	4
33	E-Learning 10	10	2
34	Mentoring Support – Project Planning -3	10	2
35	Mentoring Support – Project Implementation -3	10	2
36	Mentoring Support – Additional Practice 10	10	2
37	Mentoring Support – Project Planning -4	11	2
38	Mentoring Support – Project Implementation -4	11	2
39	Mentoring Support – Additional Practice 11	11	4
40	Mentoring Support – Project Planning -5	12	2
41	Mentoring Support – Project Implementation -5	12	2
42	Mentoring Support – Additional Practice 12	12	4
43	Mentoring Support – Additional Practice 13	13	8
44	Mentoring Support – Additional Practice 14	14	8
45	Mentoring Support – Additional Practice 15	15	8
46	Summative Assessment (per learner)	16	30 min

7.2.2 - Part Time

Session No#	Session Type	Day No. #	Duration Hrs
1	E-Learning 1	1	2
2	Flipped Class on IU 1	1	2
3	Mentoring Support - Assignment on IU 1	2	2
4	E-Learning 2	3	2
5	Flipped Class on IU 2	3	2
6	Mentoring Support - Assignment on IU 2	4	2
7	E-Learning 3	5	2
8	Flipped Class on IU 3	5	2
9	Mentoring Support - Assignment on IU 3	6	2
10	E-Learning on 4	7	2
11	Flipped Class on IU 4	7	2
12	Mentoring Support - Assignment on IU 4	8	2
13	E-Learning 5	9	2
14	Flipped Class on IU 5	9	2
15	Mentoring Support - Assignment on IU 5	10	2
16	E-Learning 6	11	2
17	Mentoring Support – Project Planning -1	12	2
18	E-Learning 7	13	2
19	Mentoring Support -Project Implementation -1	14	2
20	E-Learning 8	15	2
21	Mentoring Support – Project Planning -2	16	2
22	E-Learning 9	17	2
23	Mentoring Support – Project Implementation -2	18	2
24	E-Learning 10	19	2
25	Mentoring Support – Project Planning -3	20	2
26	Mentoring Support – Project Implementation -3	21	2
27	Mentoring Support – Project Planning - 4	22	2
28	Mentoring Support – Project Implementation -4	23	2
29	Mentoring Support – Project Planning - 5	24	2
30	Mentoring Support – Project Implementation - 5	25	2
31	Summative Assessment (per learner)	26	30 min

8. Module 4: Cloud Administration

8.1 Module Brief

The **"Cloud administration"** module imparts essential knowledge and skills to learners in effectively managing and optimizing cloud-based infrastructure using Azure Virtual Desktop (AVD).

Through the instructional units (IU), learners will gain expertise in various areas. They will learn to plan and implement AVD, understanding the key considerations and requirements for successful deployment. Learners will acquire hands-on experience in configuring and optimizing AVD infrastructure, ensuring it aligns with organizational needs. They will also develop proficiency in managing access, security, user environments, and applications within the AVD environment. Additionally, learners will learn to monitor and maintain AVD infrastructure, ensuring its performance, reliability, and scalability.

The module's projects enable learners to apply their knowledge and skills in practical scenarios. By developing and implementing a strategic IT infrastructure plan, learners will oversee and synchronize the performance of infrastructure elements. They will ensure smooth operations and optimal resource utilization. Ultimately, learners will gain practical experience in cloud administration, empowering them to contribute to the successful management of cloud-based infrastructure.

In conclusion, the "Cloud Administration " module prepares learners for cloud administration roles, equipping them with competencies to support the development and optimization of strategic IT infrastructures in a dynamic cloud environment.

Instructional Units:

- 1. Plan an Azure Virtual Desktop Implementation
- 2. Implement an Azure Virtual Desktop Infrastructure
- 3. Manage access and security.
- 4. Manage user environments and apps.
- 5. Monitor and maintain a AVD infrastructure.

Module Project:

Project Objective: Support the development of implementing a strategic IT infrastructure plan, overseeing and synchronizing the performance of infrastructure elements.

Project Tasks

- 1. Design an Azure infrastructure for high availability and fault tolerance.
- 2. Architect a disaster recovery solution for the company's mission-critical application on Azure.
- 3. Implement and test the disaster recovery solution using Azure services and configurations.

8.2.1 – Full Time

Session	Consister Terros	Day No.	Duration
No#	Session Type	#	Hrs
1	E-Learning 1	1	2
2	Flipped Class on IU 1	1	2
3	Mentoring Support - Assignment on IU 1	1	2
4	Mentoring Support -Additional Practice 1	1	2
5	E-Learning 2	2	2
6	Flipped Class on IU 2	2	2
7	Mentoring Support - Assignment on IU 2	2	2
8	Mentoring Support -Additional Practice 2	2	2
9	E-Learning 3	3	2
10	Flipped Class on IU 3	3	2
11	Mentoring Support - Assignment on IU 3	3	2
12	Mentoring Support -Additional Practice 3	3	2
13	E-Learning on 4	4	2
14	Flipped Class on IU 4	4	2
15	Mentoring Support - Assignment on IU 4	4	2
16	Mentoring Support -Additional Practice 4	4	2
17	E-Learning 5	5	2
18	Flipped Class on IU 5	5	2
19	Mentoring Support - Assignment on IU 5	5	2
20	Mentoring Support -Additional Practice 5	5	2
21	E-Learning 6	6	2
22	Mentoring Support – Project Planning -1	6	2
23	Mentoring Support – Additional Practice 6	6	4
24	E-Learning 7	7	2
25	Mentoring Support -Project Implementation -1	7	2
26	Mentoring Support – Additional Practice 7	7	4
27	E-Learning 8	8	2
28	Mentoring Support – Project Planning -2	8	2
29	Mentoring Support – Additional Practice 8	8	4
30	E-Learning 9	9	2
31	Mentoring Support – Project Implementation -2	9	2
32	Mentoring Support – Additional Practice 9	9	4
33	E-Learning 10	10	2
34	Mentoring Support – Project Planning -3	10	2
35	Mentoring Support – Project Implementation -3	10	2
36	Mentoring Support – Additional Practice 10	10	2
37	Mentoring Support – Project Planning -4	11	2
38	Mentoring Support – Project Implementation -4	11	2
39	Mentoring Support – Additional Practice 11	11	4
40	Mentoring Support – Project Planning -5	12	2
41	Mentoring Support – Project Implementation -5	12	2
42	Mentoring Support – Additional Practice 12	12	4
43	Mentoring Support – Additional Practice 13	13	8
44	Mentoring Support – Additional Practice 14	14	8
45	Mentoring Support – Additional Practice 15	15	8
46	Summative Assessment (per learner)	16	30 min

8.2.2 - Part Time

Session No#	Session Type	Day No. #	Duration Hrs
1	E-Learning 1	1	2
2	Flipped Class on IU 1	1	2
3	Mentoring Support - Assignment on IU 1	2	2
4	E-Learning 2	3	2
5	Flipped Class on IU 2	3	2
6	Mentoring Support - Assignment on IU 2	4	2
7	E-Learning 3	5	2
8	Flipped Class on IU 3	5	2
9	Mentoring Support - Assignment on IU 3	6	2
10	E-Learning on 4	7	2
11	Flipped Class on IU 4	7	2
12	Mentoring Support - Assignment on IU 4	8	2
13	E-Learning 5	9	2
14	Flipped Class on IU 5	9	2
15	Mentoring Support - Assignment on IU 5	10	2
16	E-Learning 6	11	2
17	Mentoring Support – Project Planning -1	12	2
18	E-Learning 7	13	2
19	Mentoring Support -Project Implementation -1	14	2
20	E-Learning 8	15	2
21	Mentoring Support – Project Planning -2	16	2
22	E-Learning 9	17	2
23	Mentoring Support – Project Implementation -2	18	2
24	E-Learning 10	19	2
25	Mentoring Support – Project Planning -3	20	2
26	Mentoring Support – Project Implementation -3	21	2
27	Mentoring Support – Project Planning - 4	22	2
28	Mentoring Support – Project Implementation -4	23	2
29	Mentoring Support – Project Planning - 5	24	2
30	Mentoring Support – Project Implementation - 5	25	2
31	Summative Assessment (per learner)	26	30 min

9. Module 5 – Python Programming

9.1 Module Brief

The Python Programming module provides learners with the necessary knowledge and skills to embark on their coding journey. Whether they are beginners or aspiring developers, this module offers a solid understanding of programming concepts and techniques. It covers fundamental principles such as programming languages, paradigms, and program execution, establishing a strong foundation in programming concepts and terminology that enhances learners' ability to comprehend and test code. By engaging in practical exercises and hands-on activities, learners develop problem-solving skills and critical thinking abilities, improving their coding proficiency and enabling them to write efficient and well-structured code.

During the module project, learners demonstrate their ability to apply the knowledge and skills they have acquired by building software components. This project serves as a platform for showcasing their competence in analyzing technical requirements and translating them into robust designs. With their proficiency in programming paradigms and languages, learners can implement software components based on technical design. Furthermore, they develop the capability to ensure software quality by employing various testing methods. In summary, learners gain the ability to write well-structured code, apply object-oriented programming principles, conduct thorough testing, and effectively document their code, establishing a strong foundation for their future programming endeavors.

Instructional Units:

- 1. Introduction to Programming
- 2. Programming Basics Part 1
- 3. Programming Basics Part 2
- 4. Object Oriented Programming
- 5. Testing & Documentation

Module Project:

Project Objective: Develop the software components based on the technical design to fulfil the business requirements by adopting the software design principles and interfacing techniques.

Project Tasks

- 1. Formulate the system requirements specification to fulfil the functional, technical, and interface requirements.
- 2. Design the software components required to fulfil the system requirements specification.
- 3. Evaluate the tools and frameworks required for the development.
- 4. Develop the software based on the design.
- 5. Evaluate the implemented solution.

9.2.1 – Full Time

Session	Consist True	Day No.	Duration
No#	Session Type	#	Hrs
1	E-Learning 1	1	2
2	Flipped Class on IU 1	1	2
3	Mentoring Support - Assignment on IU 1	1	2
4	Mentoring Support -Additional Practice 1	1	2
5	E-Learning 2	2	2
6	Flipped Class on IU 2	2	2
7	Mentoring Support - Assignment on IU 2	2	2
8	Mentoring Support -Additional Practice 2	2	2
9	E-Learning 3	3	2
10	Flipped Class on IU 3	3	2
11	Mentoring Support - Assignment on IU 3	3	2
12	Mentoring Support -Additional Practice 3	3	2
13	E-Learning on 4	4	2
14	Flipped Class on IU 4	4	2
15	Mentoring Support - Assignment on IU 4	4	2
16	Mentoring Support -Additional Practice 4	4	2
17	E-Learning 5	5	2
18	Flipped Class on IU 5	5	2
19	Mentoring Support - Assignment on IU 5	5	2
20	Mentoring Support -Additional Practice 5	5	2
21	E-Learning 6	6	2
22	Mentoring Support – Project Planning -1	6	2
23	Mentoring Support – Additional Practice 6	6	4
24	E-Learning 7	7	2
25	Mentoring Support - Project Implementation -1	7	2
26	Mentoring Support – Additional Practice 7	7	4
27	E-Learning 8	8	2
28	Mentoring Support – Project Planning -2	8	2
29	Mentoring Support – Additional Practice 8	8	4
30	E-Learning 9	9	2
31	Mentoring Support – Project Implementation -2	9	2
32	Mentoring Support – Additional Practice 9	9	4
33	E-Learning 10	10	2
34	Mentoring Support – Project Planning -3	10	2
35	Mentoring Support – Project Implementation -3	10	2
36	Mentoring Support – Additional Practice 10	10	2
37	Mentoring Support – Project Planning -4	11	2
38	Mentoring Support – Project Implementation -4	11	2
39	Mentoring Support – Additional Practice 11	11	4
40	Mentoring Support – Project Planning -5	12	2
41	Mentoring Support – Project Implementation -5	12	2
42	Mentoring Support – Additional Practice 12	12	4
43	Mentoring Support – Additional Practice 13	13	8
44	Mentoring Support – Additional Practice 14	14	8
45	Mentoring Support – Additional Practice 15	15	8
46	Summative Assessment (per learner)	16	30 min

9.2.2 - Part Time

Session No#	Session Type	Day No. #	Duration Hrs
1	E-Learning 1	1	2
2	Flipped Class on IU 1	1	2
3	Mentoring Support - Assignment on IU 1	2	2
4	E-Learning 2	3	2
5	Flipped Class on IU 2	3	2
6	Mentoring Support - Assignment on IU 2	4	2
7	E-Learning 3	5	2
8	Flipped Class on IU 3	5	2
9	Mentoring Support - Assignment on IU 3	6	2
10	E-Learning on 4	7	2
11	Flipped Class on IU 4	7	2
12	Mentoring Support - Assignment on IU 4	8	2
13	E-Learning 5	9	2
14	Flipped Class on IU 5	9	2
15	Mentoring Support - Assignment on IU 5	10	2
16	E-Learning 6	11	2
17	Mentoring Support – Project Planning -1	12	2
18	E-Learning 7	13	2
19	Mentoring Support -Project Implementation -1	14	2
20	E-Learning 8	15	2
21	Mentoring Support – Project Planning -2	16	2
22	E-Learning 9	17	2
23	Mentoring Support – Project Implementation -2	18	2
24	E-Learning 10	19	2
25	Mentoring Support – Project Planning -3	20	2
26	Mentoring Support – Project Implementation -3	21	2
27	Mentoring Support – Project Planning - 4	22	2
28	Mentoring Support – Project Implementation -4	23	2
29	Mentoring Support – Project Planning - 5	24	2
30	Mentoring Support – Project Implementation - 5	25	2
31	Summative Assessment (per learner)	26	30 min

10. Module 6: Dev Ops Engineering

10.1 Module Brief

The "DevOps Engineering" module empowers learners with essential knowledge and skills to excel in the dynamic field of DevOps. Throughout this comprehensive learning experience, participants will acquire expertise in critical areas of DevOps practices, facilitating seamless software development and deployment processes.

By engaging with the listed learning units, learners will embark on a transformative DevOps journey, understanding the significance of DevOps in modern enterprise development. They will delve into the implementation of Continuous Integration (CI) with Azure Pipelines and GitHub Actions, mastering the art of automating build, test, and deployment processes.

Furthermore, participants will learn to strategize and execute efficient release processes, ensuring smooth and controlled software deployments with Release strategy design and implementation. The module will also equip learners with the ability to implement secure continuous deployment using Azure Pipelines, emphasizing the importance of security in DevOps practices.

A key focus of the module lies in Infrastructure as Code (IaC) management, where learners will gain proficiency in automating Azure resource provisioning and configuration through code, enhancing consistency and scalability.

By successfully completing the module's projects, participants will acquire hands-on experience in implementing DevOps practices. They will create robust CI/CD pipelines, employ Infrastructure as Code for efficient resource management, and ensure secure development using Azure technologies. Armed with these skills, learners will be well-prepared to excel in the realm of DevOps Engineering, contributing to the success of agile and high-performing software development teams.

Instructional Units:

- 1. DevOps transformation journey and enterprise development
- 2. CI with Azure Pipelines and GitHub Actions
- 3. Release strategy design and implementation
- 4. Secure continuous deployment with Azure Pipelines
- 5. Infrastructure as code management using Azure and DSC

Module Project:

Project Objective: Implement DevOps practices with CI/CD pipelines, Infrastructure as a Code, and secure development using Azure technologies. **Project Tasks**

- 1. Design CI/CD pipelines in Azure DevOps for automated build, test, and deployment. Implement branching and code quality checks.
- 2. Use ARM templates or Terraform for Infrastructure as Code. Automate Azure resource provisioning and configuration for consistency.
- 3. Implement security in DevOps. Integrate Azure Security Center, Policies for compliance, and vulnerability assessments for secure development and deployment.

10.2.1 - Full Time

Session	Session Type	Day No.	Duration
No#	Session Type	#	Hrs
1	E-Learning 1	1	2
2	Flipped Class on IU 1	1	2
3	Mentoring Support - Assignment on IU 1	1	2
4	Mentoring Support -Additional Practice 1	1	2
5	E-Learning 2	2	2
6	Flipped Class on IU 2	2	2
7	Mentoring Support - Assignment on IU 2	2	2
8	Mentoring Support -Additional Practice 2	2	2
9	E-Learning 3	3	2
10	Flipped Class on IU 3	3	2
11	Mentoring Support - Assignment on IU 3	3	2
12	Mentoring Support -Additional Practice 3	3	2
13	E-Learning on 4	4	2
14	Flipped Class on IU 4	4	2
15	Mentoring Support - Assignment on IU 4	4	2
16	Mentoring Support -Additional Practice 4	4	2
17	E-Learning 5	5	2
18	Flipped Class on IU 5	5	2
19	Mentoring Support - Assignment on IU 5	5	2
20	Mentoring Support -Additional Practice 5	5	2
21	E-Learning 6	6	2
22	Mentoring Support – Project Planning -1	6	2
23	Mentoring Support – Additional Practice 6	6	4
24	E-Learning 7	7	2
25	Mentoring Support -Project Implementation -1	7	2
26	Mentoring Support – Additional Practice 7	7	4
27	E-Learning 8	8	2
28	Mentoring Support – Project Planning -2	8	2
29	Mentoring Support – Additional Practice 8	8	4
30	E-Learning 9	9	2
31	Mentoring Support – Project Implementation -2	9	2
32	Mentoring Support – Additional Practice 9	9	4
33	E-Learning 10	10	2
34	Mentoring Support – Project Planning -3	10	2
35	Mentoring Support – Project Implementation - 3	10	2
36	Mentoring Support – Additional Practice 10	10	2
37	Mentoring Support – Project Planning -4	10	2
38	Mentoring Support – Project Implementation -4	11	2
30	Mentoring Support – Additional Practice 11	11	<u> </u>
40	Mentoring Support – Project Danning -5	12	2
41	Mentoring Support - Project Indiming -5	12	2
42	Mentoring Support – Additional Dractice 12	12	<u> </u>
12	Mentoring Support - Additional Practice 12	12	ч Q
43	Montoring Support - Additional Practice 14	13	0
44	Mentoring Support - Additional Practice 14	15	0
45	Summative Accordment (new learner)	15	0 20 min
40	j summative Assessment (per learner)	10	50 11111

10.2.2 - Part Time

Session	Sossian Tyme	Day No.	Duration
No#	Session Type	#	Hrs
1	E-Learning 1	1	2
2	Flipped Class on IU 1	1	2
3	Mentoring Support - Assignment on IU 1	2	2
4	E-Learning 2	3	2
5	Flipped Class on IU 2	3	2
6	Mentoring Support - Assignment on IU 2	4	2
7	E-Learning 3	5	2
8	Flipped Class on IU 3	5	2
9	Mentoring Support - Assignment on IU 3	6	2
10	E-Learning on 4	7	2
11	Flipped Class on IU 4	7	2
12	Mentoring Support - Assignment on IU 4	8	2
13	E-Learning 5	9	2
14	Flipped Class on IU 5	9	2
15	Mentoring Support - Assignment on IU 5	10	2
16	E-Learning 6	11	2
17	Mentoring Support – Project Planning -1	12	2
18	E-Learning 7	13	2
19	Mentoring Support - Project Implementation -1	14	2
20	E-Learning 8	15	2
21	Mentoring Support – Project Planning -2	16	2
22	E-Learning 9	17	2
23	Mentoring Support – Project Implementation -2	18	2
24	E-Learning 10	19	2
25	Mentoring Support – Project Planning -3	20	2
26	Mentoring Support – Project Implementation -3	21	2
27	Mentoring Support – Project Planning - 4	22	2
28	Mentoring Support – Project Implementation -4	23	2
29	Mentoring Support – Project Planning - 5	24	2
30	Mentoring Support – Project Implementation - 5	25	2
31	Summative Assessment (per learner)	26	30 min

11. Module 7: Agile Project Management

11.1 Module Brief

The Agile Project Management module provides learners with a comprehensive understanding of project management and Scrum methodology implementation. The module covers essential topics such as Agile Project Management, Project Management using Scrum, Building a Scrum Team, and Scrum Planning & Implementation. Learners develop expertise in implementing Project Management using Scrum, including project planning, user story prioritization, role assignment, sprint execution, and defining sprints and success measures.

The unit incorporates real-world case studies to enhance practical understanding. Case Study 1 focuses on the implementation of Scrum within a product team, providing learners with authentic scenarios and challenges. Case Study 2 explores overcoming obstacles in Scrum implementation, equipping learners with hands-on experience in managing project complexities. Case Study 3 examines the impact of organizational and team structures on Agile project management, offering valuable insights for optimizing project performance. Learners will also gain hands on exposure to using ClickUp tool to create and manage the scrum.

By combining theory and practical experience, the unit equips learners to apply Agile principles and leverage Scrum methodology effectively. Upon completion, learners possess the skills needed to navigate project management intricacies and drive successful outcomes.

Instructional Units:

- 1. Agile Project Management and Project Management using Scrum
- 2. Building a Scrum Team and Scrum Planning & Implementation
- 3. Case Study 1 About Product Team Implementing Scrum
- 4. Case Study 2 Implementation of Scrum
- 5. Case Study 3 Org Structure / Team Structure

Module Project:

Project Objective: Implement Project Management using Scrum, plan projects, prioritize user stories, assign roles, execute sprints, and define sprints and success measures.

Project Tasks:

- 1. Outline the Scrum Project
- 2. Build the Scrum team & Implementation plan
- 3. Create a backlog and prioritize user stories
- 4. Execute a mock sprint, sprint review, and sprint retrospective using Scrum
- 5. Create and manage your tasks and sprints using the ClickUp tool

11.2.1 - Full Time

Session	Sossion Type	Day No.	Duration
No#	Session Type	#	Hrs
1	E-Learning 1	1	2
2	Flipped Class on IU 1	1	2
3	Mentoring Support - Assignment on IU 1	1	2
4	Mentoring Support -Additional Practice 1	1	2
5	E-Learning 2	2	2
6	Flipped Class on IU 2	2	2
7	Mentoring Support - Assignment on IU 2	2	2
8	Mentoring Support -Additional Practice 2	2	2
9	E-Learning 3	3	2
10	Flipped Class on IU 3	3	2
11	Mentoring Support - Assignment on IU 3	3	2
12	Mentoring Support -Additional Practice 3	3	2
13	E-Learning on 4	4	2
14	Flipped Class on IU 4	4	2
15	Mentoring Support - Assignment on IU 4	4	2
16	Mentoring Support -Additional Practice 4	4	2
17	E-Learning 5	5	2
18	Flipped Class on IU 5	5	2
19	Mentoring Support - Assignment on IU 5	5	2
20	Mentoring Support -Additional Practice 5	5	2
21	E-Learning 6	6	2
22	Mentoring Support – Project Planning -1	6	2
23	Mentoring Support – Additional Practice 6	6	4
24	E-Learning 7	7	2
25	Mentoring Support -Project Implementation -1	7	2
26	Mentoring Support – Additional Practice 7	7	4
27	E-Learning 8	8	2
28	Mentoring Support – Project Planning -2	8	2
29	Mentoring Support – Additional Practice 8	8	4
30	E-Learning 9	9	2
31	Mentoring Support – Project Implementation -2	9	2
32	Mentoring Support – Additional Practice 9	9	4
33	E-Learning 10	10	2
34	Mentoring Support – Project Planning -3	10	2
35	Mentoring Support – Project Implementation -3	10	2
36	Mentoring Support – Additional Practice 10	10	2
37	Mentoring Support – Project Planning -4	11	2
38	Mentoring Support – Project Implementation -4	11	2
39	Mentoring Support – Additional Practice 11	11	4
40	Mentoring Support – Project Planning -5	12	2
41	Mentoring Support – Project Implementation -5	12	2
42	Mentoring Support – Additional Practice 12	12	4
43	Mentoring Support – Additional Practice 12	13	8
44	Mentoring Support – Additional Practice 14	14	8
45	Mentoring Support – Additional Practice 15	15	8
46	Summative Assessment (per learner)	16	30 min

11.2.2 - Part Time

Session No#	Session Type	Day No. #	Duration Hrs
1	E-Learning 1	1	2
2	Flipped Class on IU 1	1	2
3	Mentoring Support - Assignment on IU 1	2	2
4	E-Learning 2	3	2
5	Flipped Class on IU 2	3	2
6	Mentoring Support - Assignment on IU 2	4	2
7	E-Learning 3	5	2
8	Flipped Class on IU 3	5	2
9	Mentoring Support - Assignment on IU 3	6	2
10	E-Learning on 4	7	2
11	Flipped Class on IU 4	7	2
12	Mentoring Support - Assignment on IU 4	8	2
13	E-Learning 5	9	2
14	Flipped Class on IU 5	9	2
15	Mentoring Support - Assignment on IU 5	10	2
16	E-Learning 6	11	2
17	Mentoring Support – Project Planning -1	12	2
18	E-Learning 7	13	2
19	Mentoring Support -Project Implementation -1	14	2
20	E-Learning 8	15	2
21	Mentoring Support – Project Planning -2	16	2
22	E-Learning 9	17	2
23	Mentoring Support – Project Implementation -2	18	2
24	E-Learning 10	19	2
25	Mentoring Support – Project Planning -3	20	2
26	Mentoring Support – Project Implementation -3	21	2
27	Mentoring Support – Project Planning - 4	22	2
28	Mentoring Support – Project Implementation -4	23	2
29	Mentoring Support – Project Planning - 5	24	2
30	Mentoring Support – Project Implementation - 5	25	2
31	Summative Assessment (per learner)	26	30 min

12. Module 8: Capstone Project -Cloud Computing

12.1 Module Brief

The **" Capstone Project-Cloud Computing (Industry Project)** " module equips learners with a comprehensive set of skills to excel in the realm of DevOps, focusing on practical application and real-world scenarios. Through engagement with the listed learning units, participants will gain proficiency in crucial aspects of DevOps practices and Azure technologies.

Learners will first explore Agile planning and portfolio management using Azure Boards, enabling them to create efficient project plans and manage portfolios effectively. They will then delve into version controlling with Git in Azure Repos, ensuring seamless collaboration and version management in software development.

Next, participants will configure agent pools and understand pipeline styles, optimizing resource allocation and streamlining the pipeline design process. They will further enhance their DevOps capabilities by enabling continuous integration with Azure Pipelines, automating build, test, and deployment workflows.

Finally, learners will implement GitHub Actions for CI/CD automation, elevating their skills in code integration and continuous delivery.

In the Capstone Project, learners will apply their knowledge to real-world scenarios, creating an application implementation plan that incorporates Agile planning principles, Git version control, CI/CD automation using Azure Pipelines, and GitHub Actions. Through this hands-on experience, participants will acquire the ability to enhance DevOps practices and seamlessly integrate Azure technologies into their application development workflows. By the end of the module, learners will be well-prepared to tackle complex DevOps challenges, contributing to the success of agile and high-performing development teams.

Instructional Units

- 1. Agile Planning and Portfolio Management with Azure Boards
- 2. Version Controlling with Git in Azure Repos
- 3. Configuring Agent Pools and Understanding Pipeline Styles
- 4. Enabling Continuous Integration with Azure Pipelines
- 5. Implementing GitHub Actions for CI/CD

Module Project

Project Objective: Enhance DevOps capabilities with Agile planning, Git version control, CI/CD automation, and Azure Pipelines integration.

Project Tasks:

- 1. Develop an Agile project plan using Azure Boards.
- 2. Implement version control using Git in Azure Repos.
- 3. Configure agent pools and define pipeline styles.
- 4. Enable continuous integration with Azure Pipelines.
- 5. Implement GitHub Actions for CI/CD automation

12.2.1 Full Time

Session	Session Type		Duration Hrs
1	Mentoring Support - Project Planning -1	1 1	2
2	Mentoring Support – Projects Implementation 1	1	2
3	Mentoring Support - Additional Practice 1	1	4
4	Mentoring Support – Project Planning -2	2	2
5	Mentoring Support – Projects Implementation 2	2	2
6	Mentoring Support - Additional Practice 2	2	4
7	Mentoring Support – Project Planning -3	3	2
8	Mentoring Support – Projects Implementation 3	3	2
9	Mentoring Support - Additional Practice 3	3	4
10	Mentoring Support – Project Planning -4	4	2
11	Mentoring Support – Projects Implementation 4	4	2
12	Mentoring Support - Additional Practice 4	4	4
13	Mentoring Support – Project Planning -5	5	2
14	Mentoring Support – Projects Implementation 5	5	2
15	Mentoring Support - Additional Practice 5	5	4
16	Mentoring Support – Project Planning -6	6	2
17	Mentoring Support – Projects Implementation 6	6	2
18	Mentoring Support - Additional Practice 6	6	4
19	Mentoring Support – Project Planning -7	7	2
20	Mentoring Support – Projects Implementation 7	7	2
21	Mentoring Support - Additional Practice 7	7	4
22	Mentoring Support – Project Planning -8	8	2
23	Mentoring Support – Projects Implementation 8	8	2
24	Mentoring Support - Additional Practice 8	8	4
25	Mentoring Support – Project Planning -9	9	2
26	Mentoring Support – Projects Implementation 9	9	2
27	Mentoring Support - Additional Practice 9	9	4
28	Mentoring Support – Project Planning -10	10	2
29	Mentoring Support – Projects Implementation 10	10	2
30	Mentoring Support - Additional Practice 10	10	4
31	Mentoring Support – Project Planning -11	11	2
32	Mentoring Support – Projects Implementation 11	11	2
33	Mentoring Support - Additional Practice 11	11	4
34	Mentoring Support – Project Planning -12	12	2
35	Mentoring Support – Projects Implementation 12	12	2
36	Mentoring Support - Additional Practice 12	12	4
37	Mentoring Support – Project Planning -13	13	2
38	Mentoring Support – Projects Implementation 13	13	2
39	Mentoring Support - Additional Practice 13	13	4
40	Mentoring Support – Project Planning -14	14	2
41	Mentoring Support – Projects Implementation 14	14	2
42	Mentoring Support - Additional Practice 14	14	4
43	Mentoring Support – Project Planning -15	15	2
44	Mentoring Support – Projects Implementation 15	15	2
45	Mentoring Support - Additional Practice 15	15	4
46	Summative Assessment (per learner)	16	30 min

12.2.2 Part Time

Session No#	Session Type	Day No. #	Duration Hrs
1	Mentoring Support – Project Planning -1	1	2
2	Mentoring Support – Projects Implementation 1	2	2
3	Mentoring Support – Project Planning -2	3	2
4	Mentoring Support – Projects Implementation 2	4	2
5	Mentoring Support – Project Planning -3	5	2
6	Mentoring Support – Projects Implementation 3	6	2
7	Mentoring Support – Project Planning -4	7	2
8	Mentoring Support – Projects Implementation 4	8	2
9	Mentoring Support – Project Planning -5	9	2
10	Mentoring Support – Projects Implementation 5	10	2
11	Mentoring Support – Project Planning -6	11	2
12	Mentoring Support – Projects Implementation 6	12	2
13	Mentoring Support – Project Planning -7	13	2
14	Mentoring Support – Projects Implementation 7	14	2
15	Mentoring Support – Project Planning -8	15	2
16	Mentoring Support – Projects Implementation 8	16	2
17	Mentoring Support – Project Planning -9	17	2
18	Mentoring Support – Projects Implementation 9	18	2
19	Mentoring Support – Project Planning -10	19	2
20	Mentoring Support – Projects Implementation 10	20	2
21	Mentoring Support – Project Planning -11	21	2
22	Mentoring Support – Projects Implementation 11	22	2
23	Mentoring Support – Project Planning -12	23	2
24	Mentoring Support – Projects Implementation 12	24	2
25	Mentoring Support – Project Planning -13	25	2
26	Mentoring Support – Projects Implementation 13	26	2
27	Mentoring Support – Project Planning -14	27	2
28	Mentoring Support – Projects Implementation 14	28	2
29	Mentoring Support – Project Planning -15	29	2
30	Mentoring Support – Projects Implementation 15	30	2
31	Summative Assessment (per learner)	31	30 min

13. Credentials & Pricing

13.1 Credentials

Name of the Credentials	Details
Academic Qualification	Professional Diploma in Cloud Computing issued by Educlaas, India
EduCLaaS Job Role Certification	Cloud Administrator
Industry Skills Certification	 Install and Configure Server Microsoft Azure Administrator (AZ 104) Administer Server Administering Windows Server Hybrid Core Infrastructure (AZ 800) Configure Advanced Server Configuring Windows Server Hybrid Advanced Services (AZ 801) Cloud Administration Configuring and Operating Microsoft Azure Virtual Desktop (AZ 140) Dev Ops Engineering Designing and Implementing Microsoft DevOps Solutions (AZ-400) Agile Project Management Professional Scrum Master™ I Certification Taking this certification is not mandatory. However, if the learner wishes to pursue it, they need to register for the examination after paying the necessary fees wherever it is applicable.

13.2 Price

Full Time (Bootcamp)	USD 4800
Part time	USD 3200

13.3 Pathway



(<u>UniMarconi</u> - Master in Computer Science -Pathway





ADDENDUM

A. Learning Activity Definition

A1. Delivery mode

This course offers two delivery modes: Full-Time and Part-Time.

Full-Time classes follow a boot camp method where learners attend synchronous classes for 8 hours a day and 5 days a week, excluding public holidays. Throughout these 8 hours, learners actively participate in various learning activities, which are further elaborated below. Additionally, extra practice sessions are scheduled during full-time studies to ensure that learners can complete all the coursework within the class hours.

Part-Time classes, on the other hand, are conducted in the evenings after working hours and/or on Saturdays. No classes are held on public holidays.

Learning Mode	Course Duration	Guided Learning Hours	Additional Practice Hours	Hours/Week	days/Week	Hours/Day
Full-time (Bootcamp)	6 months (24 weeks)	480 hours	480 hours	40 hours/week	5 days/week	8 hours/day
Part-time	12 months (48 weeks)	480 hours	NA	10 hours/week	3 day/week	3 – 3.5 hours/day

A2. E-learning (EL)

(Full-Time - Synchronous E-Learning & Part-Time - Asynchronous E-Learning)

Learners are obligated to participate in e-learning via Lithan LMS, making use of the provided e-content for each Instructional Unit according to the Session Plan.

Part-time learners can securely access the e-contents in LMS from any location. If they have any questions or concerns, they can post them on Lithan LMS forums, where Learning Associates or Learning Facilitators will address them.

Full-time learners, on the other hand, will utilize the e-contents during the boot camp sessions, and they will receive support from their mentor for any questions or concerns.

Before engaging in any other activities related to the Instructional Units, Learners must complete the elearning materials and multiple-choice questions. It is mandatory for Learners to achieve a minimum score of 70% in each of the MCQs to be eligible for the summative assessments. Hence, completion of the e-learning contents is required before attending the flipped class.

A3. Flipped Class (FC)

(Full-Time & Part-time - Synchronous E-Learning)

Learners are obligated to participate in the Flipped Class Synchronous E-Learning Sessions as per the Session Plan. It is compulsory for each learner to complete the e-learning before attending the flipped class.

Before the flipped class session, the instructor or Learning Facilitator will check the LMS to confirm that each learner has finished the e-learning content and the MCQ. Learners must achieve a minimum score of 70% in each of the MCQs.

The synchronous flipped class session will be conducted using the MS Teams webinar tool. During this session, the instructor will guide learners through the assignment corresponding to the instructional unit assigned for the flipped class. The instructor will provide a demonstration of the assignment to enhance learners' understanding and proficiency in completing it.

Throughout the explanation of the assignment, the instructor will emphasize and reinforce essential concepts. Moreover, the instructor will closely monitor the progress of students who may need additional support to ensure they are making satisfactory progress. Any questions or concerns raised by the learners will be addressed, and clarifications will be provided. The primary objective of this session is to ensure the accomplishment of the learning outcomes.

A4. Mentoring Support -Assignments (AS)

(Full-Time & Part-time - Synchronous E-Learning)

Industry professionals and subject matter experts provide valuable support for the completion of assignments. The synchronous mentoring support session is conducted using the MS Teams webinar tool. This session is scheduled after the flipped class and is designed to assist learners in completing the assignments related to the instructional units outlined in the Session Plan.

During these sessions, learners have access to guidance and assistance from industry experts and subject matter experts in the relevant field. It is crucial for learners to actively seek help from their mentors during these sessions to ensure the successful completion of assignments and to submit them on time via the Learning Management System (LMS).

To be eligible for the summative assessment, learners must obtain a minimum score of 70% in each assignment and submit it in accordance with the given guidelines.

A5. Mentoring Support-Project Planning (PP)

(Full-Time & Part-time - Synchronous E-Learning)

Learners need to do the project either individually or groups as stated in the session plan. Industry professionals and subject matter experts offer valuable assistance in project completion. The synchronous mentoring support session takes place using the MS Teams webinar tool. This session is scheduled once learners have acquired the necessary knowledge and skills through flipped classes and assignments. The following activities will be conducted during this session.

- The mentor will explain the project and its tasks using the project brief document.
- The mentor will provide guidance and support for implementing the project.
- The mentor will offer necessary feedback and comments upon the completion of each task of the project.
- The mentor will arrange a peer review and feedback session following the completion of each task of the project.

It is crucial for learners to actively seek help from their mentors during these sessions to ensure the successful completion of projects. This successful completion serves as evidence of their ability to meet the defined objectives of this module and requires timely submission of the project report through the Learning Management System (LMS). The project report is one of the summative assessments for this module.

A6. Mentoring Support -Project Implementation (PI)

(Full-Time - Synchronous E-Learning & Part-Time - Asynchronous E-Learning)

Upon completing the synchronous project planning session, learners are expected to carry out the implementation of their projects during the subsequent project implementation session.

Part-time learners have secure access to the project brief in LMS from any location. If they have any questions or concerns, they can post them on Lithan LMS forums, where Learning Associates or Learning Facilitators will address them.

Conversely, full-time learners will implement their projects during the boot camp sessions, receiving support from their mentor for any queries or concerns.

It is mandatory for learners to complete their projects before the summative assessment and submit the Project Report, along with other relevant evidence, by the specified submission date outlined in the Session Plan. The Mentor will review the project report and provide feedback to the Learning Facilitator or Learning Associate to determine the learner's eligibility for the summative assessment. Based on this feedback, the Learning Associates will schedule the summative assessment.

During the review and feedback session of the summative assessment, the assessor will thoroughly examine the project report and evaluate the learner's performance. Subsequently, the assessor will determine whether the learner has demonstrated competence or is still not yet competent in the Project Report part of the summative assessment.

A7. Mentoring Support -Additional Practice (AP)

(Full-Time - Synchronous E-Learning & Part-Time -Not applicable)

The asynchronous e-learning session is scheduled for all the modules of this course. For full-time (boot camp) learners, this session is conducted synchronously using the MS Teams webinar tool. It is scheduled after each assignment and project planning session. Mentors or Learning associates will provide support during these sessions.

Learners are expected to:

- Review the e-learning materials and assignments to reinforce their learning.
- Finish any pending assignments and submit them to the Learning Management System (LMS) before the due date.
- Accomplish the project tasks and submit them on the LMS before the due date.

The purpose of this session is to ensure that learners do not have any pending coursework if they attend it.

A8. Summative Assessment (Synchronous E-Learning) SA

(Full-Time & Part-time - Synchronous E-Learning)

During the Summative Assessment (30 minutes duration), the assessor will assess the learner's knowledge, skills, and abilities related to the module as stated in the learning outcomes. This is a Synchronous E-learning session conducted through the Teams webinar tool. Details of the assessment are given below.

B. Assessments

B1. Formative Assessments

Assessme nt Method	Assessment Details	Duration		
To ensure that learners are continuously learning, it is mandatory to complete this formative assessment. This is applicable to each module. The score the learner receives will not contribute to their summative assessment and module grade. Learners with a minimum score of 70% in these formative Assessments will be qualified for Summative Assessments. Learners can take up to 4 attempts to attain a 70% score in Formative Assessments.				
MCQ Tests	The learner shall complete the MCQ tests on LMS during each e-learning session as per Session Plan.	Approx 15 mins / MCQ Test		
AssignmentsThe learner shall perform Assignments of each IU as per Session Plan and submit the Assignment work on LMS, immediately after completionTo		To be completed before the submission time		

Note: Formative assessments are not applicable to Capstone Module. There are no formative assessments for the Capstone module.

B2. Summative Assessments

2a. Other than Capstone Module

At the end of every module, learners are required to complete a summative assessment. To be eligible for this assessment, learners must meet the following criteria:

- Minimum attendance rate of 90% throughout the module.
- Complete the formative assessment as specified above
- Complete the project report.

2b. Capstone Module

At the end of the capstone module, learners are required to complete a summative assessment. To be eligible for this assessment, learners must meet the following criteria:

- Minimum attendance rate of 90% throughout the module.
- Complete the project report.

Eligible learners will be scheduled for the one-to-one part of the summative assessment session for the duration of 30 min as described below.

B3. Project Report

Assessment Type	Weightage	Details	Duration
		The project brief will be given to the learners as per the schedule.	
Project Report	75%	The learner shall perform the project tasks as per the guidelines given in the brief and prepare the project report as per pre-defined templates and submit it on Lithan LMS	Self-paced
	In this assessment, learners will be tested on knowledge, skills, and abilities as stated in the Lea Outcomes		
		Only one attempt is allowed for submitting the project report.	

B4. Presentation

Assessment Type	Weightage	Details	Duration
Presentation 25%		Eligible Learners will be assigned a one-on-one scheduled presentation assessment with an assessor. The synchronous Presentation session is conducted using the MS Teams webinar tool.	
		In this assessment, learners will be tested on their knowledge and abilities as stated in the Learning Outcomes Assessor to Learner ratio is 1:1	15 Min

B5. Review& Feedback

Assessment Type	Weightage	Details	Duration
		Following the project presentation session, for the next 15 mins, each learner will be scheduled for a one-on-one Review & feedback session with an assessor.	
		The synchronous Review & feedback session is conducted using the MS Teams webinar tool.	
		The assessor reviews the project Report and Presentation and provides feedback individually to each of the learners.	
		Assessor to Learner ratio is 1:1	
Review & Feedback	NA	The learner must be competent in each knowledge. Skills & abilities stated in the learning outcomes to get "Competent" in this module.	15 min
		The assessor may ask questions to address any gaps identified in the project report and Presentation and record the results in each of the Learner's "Assessment Records".	

	The assessor will get a signature from the learner in the assessment	
	record after declaring the result to the learner.	

C. Grading

Learners are graded as below in the assessments.

Overall Summative	Grade codes	Grade Description
Assessments marks		
75%-100%	D	Distinction
60% - 74%	М	Merit
50% - 59%	Р	Pass
0% - 49%	F	Fail

D. Graduation Requirements

Each learner must meet the following requirements to secure academic qualifications and eduCLaaS job role certification.

- Minimum 90 % attendance in all sessions during the bootcamp
- Minimum 75% attendance in all sessions during the part time
- Minimum pass grade in the summative assessment of each module.

E. Faculty Details

Faculty	Sessions Handling	Qualifications
Instructor	Flipped Class	 Master's in /IT, Computer science. Minimum 5 years of Industry experience with training experience
Lead Mentor	Assignments Project Mentoring	 Minimum bachelor's degree in IT/Computer science. Minimum 3 years of Industry experience
On campus Mentor / Online Mentor	E Learning Project Implementation Additional Practice Sessions	 Minimum bachelor's degree IT/Computer science. Minimum 2 years of Industry experience
Assessor	Assessment	 Same as Lead mentor Lead mentor can be assessor. ACTA / ACLP is preferable